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MEETING LOG
DIRECTORATE FOR ENGINEERING SCIENCES

SUBJECT: Meeting Summary - Department of Energy Water Heater Workshop 1 10-12

PLACE: Department of Energy, 1000 Independence Ave., S.W., Washington, D.C.
Room 1E-245

MEETING DATE: June 24, 1997, 9:00 AM - 4:30PM

LOG ENTRY SOURCE: Andrew G. Stadnik, AED, ES {signed by AGS 6/27/97}

ENTRY DATE: June 26, 1997

COMMISSION ATTENDEE: Andrew G. Stadnik, ES

NON-COMMISSION ATTENDEES: Refer to DOE transcript/minutes to be published for the complete list of attendees - Representatives from the water heater industry, utilities, related trade associations, DOE, and environmental advocacy groups were in attendance.

SUMMARY: A copy of the agenda that DOE used for the meeting is attached. This was a public meeting that the Department of Energy (DOE) held to discuss the process for rulemaking for water heater energy efficiency standards. DOE will be issuing a transcript and minutes which can be obtained directly from DOE, Bryan Berringer, 202-586-0371. A copy of the attendance list will be available from DOE with the transcript and minutes. There were over 50 people at this meeting representing the groups noted above.

The environmental advocates noted that no non-government consumer advocacy groups were present. DOE agreed to contact the AARP, US PIRG, and the Consumer Federation of America to see if they were interested in participating in the process.

DOE's agenda included various technical issues and questions that need to be addressed by DOE as part of the rulemaking process. Numerous design options to improve gas, oil, and electric water heater energy efficiency were discussed. These options will be further analyzed and evaluated under the rulemaking process to determine their viability to achieve energy efficiency target levels. The options discussed for the three different water types are provided in Table 1. Industry representatives and DOE staff asked CPSC to look at these and assess whether there were any other safety issues besides the flammable vapor (FV) issue that needed to be considered that could affect the viability of any of the design options.

The main concern of the participants was the impact of CPSC's activities on the FV issue for gas-fired water heaters, and how this could impact or be impacted by DOE's current schedule and the design options DOE is considering for the water heater efficiency standard. CPSC provided a copy of the October, 1996, status report on the gas-fired water heater FV project. Copies were made available to all participants.

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**DEPARTMENT OF ENERGY
WATER HEATER WORKSHOP**

June 24, 1997

**U.S. Department of Energy
1000 Independence Avenue, S.W.
Room 1E-245**

Purpose of Workshop: The objective of the workshop will be to discuss the process and methodology to be utilized throughout the water heater standards rulemaking process.

Outcomes of Workshop: To agree upon the process and the tools to be used for the water heater rulemaking. Determination on how to proceed with screening and engineering analysis.

Draft Agenda

9:00 - 9:30 am	Opening Remarks, Introductions, Agenda Review
9:30 - 9:45 am	Overview of Water Heater Rulemaking Schedule
9:45 - 10:30 am	Open Discussion on Rulemaking Framework <ul style="list-style-type: none">- Issues for Analysis- Analytical Methods and Tools- Data Requirement and Data Collection Methods- Industry Characterization- Identification of Experts and Other Interested Parties- Identification of Contractor Qualifications
10:30 - 10:45 am	Break
<u>10:45 - Noon</u>	Continue Discussion on Rulemaking Framework
<u>Noon - 1:00 pm</u>	Lunch (On your own)
<u>1:00 - 2:15 pm</u>	Discussion on Technology Assessment and Screening Analysis
2:15 - 2:30 pm	Break
2:30 - 3:00 pm	Issues to be Resolved
3:00 - 3:30 pm	Next Steps
3:30 - 3:45 pm	Open Discussion on How to Improve Future Workshops
3:45 - 4:00 pm	Closing Remarks - Adjournment

Interrupted Ignition			X
Thermophotovoltaic Generator	X		X
Thermoelectronic Generator	X		X
Condense Flue Gasses	X		X
Pulse Combustion	X		X
Condensing Secondary Heat Exchanger	X		X
Add-On Heat Pump		X	
Return Air Heat Pump		X	
Integral Heat Pump		X	
Submerged Water Combustion	X		
Directly Fired	X		
Off Peak	X	X	
Solar Pre-Heat	X	X	X
Tempering Tank	X	X	X
Regular Maintenance	X	X	X
Sediment Removal Features	X	X	X

Table 1. Design Options for Energy Efficiency Improvements to Hot Water Heaters

Design Option Description	Gas	Electric	Oil
Heat Traps in Water Piping	X	X	X
Reduced Heat Leakage	X	X	X
Plastic Tank	X	X	
R16 Insulation	X	X	X
R25 Insulation	X	X	X
Vacuum Insulation	X	X	X
Gas Filled Panel Insulation	X	X	X
Aerogel Insulation	X	X	X
Powder Evacuated Panel Insulation	X	X	X
Forced Draft	X		
Improved Flue Baffle	X		X
Submerged Combustion Chamber	X		
Multiple Flues	X		X
Air-Atomized Burner			X
Slow Recovery	X	X	
"U" Tube Flue	X		
Electromechanical Flue Damper	X		
Bouyancy Operated Flue Damper	X		
Indirect Heating (Side Arm Heater)	X		
Two Phase Thermosiphon (Heat Pipes)	X		
Flue Gas Dilution	X		
Electronic Ignition	X		